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EXAMINER

STINSON, FRANKIE L

ART UNIT	PAPER NUMBER
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1792

NOTIFICATION DATE	DELIVERY MODE
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12/17/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/052,553

Applicant(s)

JEONG ET AL.

Examiner

FRANKIE L. STINSON

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3, 4, 8-22, 24, 25 and 27-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18, 27 and 28 is/are allowed.
- 6) ☒ Claim(s) 1, 3, 4, 8-17, 19-22, 24, 25 and ²⁹30-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

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1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3, 4 and 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Brucken (U. S. Pat. No. 2,881,609) or Constantine (U. S. Pat. No. 2,590,295) in view of Sykes (U. S. Pat. No. 2,817,415).

Re claim 1 Brucken and Constantine are each cited a washing machine (see Constantine, col. 1, lines 15-19) comprising.

a first tub (20 in Brucken and 10 in Constantine);

a second tub (21 in Brucken and 11 in Constantine) disposed in the first tub;
at least one circulation duct (27 in Brucken and 18 in Constantine) operatively coupled with the first tub to receive air from the second tub, dehumidify the air and recirculate the dehumidified air back into the second tub to dry laundry in the second tub during a drying operation of the washing machine; and

a water supplying duct (30c in Brucken and 31 in Constantine) for supplying external water to an upper part of the inside wall of the least one circulation duct to flow down the duct to dehumidify the air in the at least one circulation duct primarily by flowing down the inner wall coming in direct contact with the air in the circulation duct, that differs from the claim only in the recitation of the circulation duct having a plurality of grooves that are of a helical configuration, for prolonging a heat exchange time period.

The patent to Sykes is cited disclosing the arrangement in a heat exchanger, where the

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heat exchanger is provided with a groove (22 in Sykes) to prolong the contact time of the humid air/vapor and the flow water. It therefore would have been obvious to modify the arrangement of either Brucken or Constantine, to include a groove as taught by Sykes, for the purpose of ensuring that the humid air/vapor receives the full effect of the falling water. It is an old and well known and an established principle in the heat exchanger art, that the efficiency of heat exchange/transfer in the pipe/tube, is increased when the pipe/tube is roughened or grooved versus the same pipe/tube where the surface is smooth, i.e., turbulent flow being more efficient in transferring heat than that of a laminar flow. As for the plurality of grooves, absent any specific function other than that of a single groove, to employ a plurality of grooves with each having the same function, is deemed to be a mere duplication of parts (see MPEP 2144.04 REVERSAL, DUPLICATION OR RE-ARRANGEMENT OF PARTS). All of the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention. Re claim 3 and 4, Brucken (as at 23 and 22) and Constantine (as at 19 and 24) disclose the fan and heater. Re claim 19, Brucken discloses the pulsator. Re claim 20, Brucken and Constantine disclose the drain. Re claim 21, Brucken discloses the spaced location as claimed. Re claim 22, Sykes to employ a plurality of groove is deemed to be a mere duplication of parts as noted above. Absent any specific function other than that of a single groove to employ a

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plurality of grooves with each having the same function, has been deemed to be a mere duplication of parts.

3. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over the cited prior art as applied to claim 1 above, and further in view of either Krupsky (U. S. Pat. No. 3,402,576) or Brucken et al. (U. S. Pat. No. 3,216,126).

Claim 10 defines over the applied prior art only in the recitation of the external air supplying duct for supplying external air towards the at least one circulation duct, said external air supplying duct has having an outlet disposed in the said at least one circulation duct; and an air fan disposed to draw the external air into the external air-supplying duct. The patents to Brucken'126 (as at 82) and Krupsky (as at 81) are cited disclosing that it is old and well known to provide a laundry dryer, which also comprises a washing machine, external air supplying duct for supplying external air towards the at least one circulation duct, said external air supplying duct has having an outlet disposed in the said at least one circulation duct; and an air fan disposed to draw the external air into the external air supplying duct. It therefore would have been obvious to one having ordinary skill in the art to modify the device of either Brucken'609 or Constantine'295, to include an external air supply as taught by either Krupsky or Brucken'126, for the purpose of allowing the entry of fresh air to the drying air circuit as is common in the art. As for the external air fan, in the arrangement of Brucken'126, external air is forced into the circulation duct by the fan already, to employ a second fan, or relocated the fan to the entrance, is deemed to be a mere extension/duplication/rearrangement of the teachings of Brucken'126 and therefore and of little patentable weight (see MPEP

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2144.04 REVERSAL, DUPLICATION OR REARRANGEMENT OF PARTS). Absent any specific function other than that of a single fan to employ a plurality of fans, with each having the same function, has been deemed to be a mere duplication of parts. The claims would have been obvious because the technique for improving a particular class of a device was part of the ordinary capabilities of a person of ordinary skill in the art, in view of the teaching of the technique for improving other situations.

4. Claims 9, 11, 12, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over the applied prior art as applied to claim 1 above, and further in view of WIPO'169 (WIPO 93/17169) or Fukumoto et al. (U. S. Pat. No. 6,282,928).

Claims 9 and 11 define over either Brucken or Constantine only in the recitation of a fan, for supplying of external air to an outer surface of the circulating duct. WIPO'169 (see page 4, lines 21-25, see fig. 1) and Fukumoto (col. 6, lines 39-49) are each cited disclosing a fan (19 in WIPO'169 and 36 in Fukumoto) for supplying external air to the outside surface of the circulating duct (13 in WIPO'169 and 13 in Fukumoto) as claimed. It therefore would have been obvious to one having ordinary skill in the art to modify the device of either Brucken or Constantine, to include a fan as taught by either WIPO'169 or Fukumoto, for the purpose of enhancing the water removal efficiency of the condenser. It is old and well known in the heat exchanger art, that the efficiency of heat transfer is increased when the transferring fluids have movement. Re claim 17, no patentable distinction is deemed to exist between the fan as claimed and the fan as taught by Fukumoto, Constantine or WIPO'169. The same are the functional equivalent of each other in that they both are employed to move external air to circulation duct for

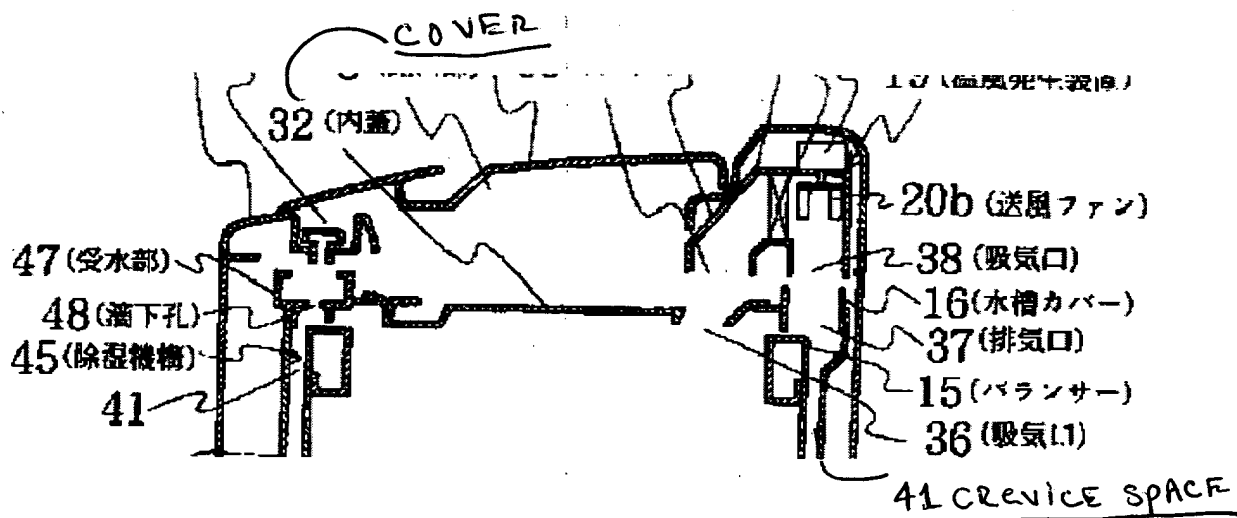
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dehumidification purposes. Re claim 12, Fukumoto discloses the fin (39) as claimed. All of the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

5. Claims 13-15, 24, 25 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japan'594 (Japan 11-128594) in view of either Muller (U. S. Pat. No. 4,154,003) or Pugh (U. S. Pat. No. 2,451,692).

Re claims 13 and 31, Japan'692 is cited disclosing a washing machine, comprising:

a first tub (5) having an inner wall;



a second tub (6) disposed in the first tub;

a structure (38, 18 in fig. 1 and 31, 19, in fig. 6) operatively coupled with at least one of the first and second tubs to receive air from the second tub, and recirculate the air back into the second tub to dry laundry in the second tub during a drying operation of the washing machine;

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a feed water valve (not shown, but typical) for supplying external water to the washing machine; and

a tub cover (32, 16, see fig. 2) placed on the first tub, the tub cover having a flow passage (as at 47) around the circumference of the second tub for discharging the external water to the inner walls of the first tub (see [0037] and [0050]) to dehumidify air in the first tub during the drying operation that differs from the claims only in the positive recitation of the structure also dehumidify the air and recirculate the dehumidified air back to the second tub, which is understood to be typical and common place in the art. Nonetheless, Muller (as at 92, 94, 96) and Pugh (as at 29) positively disclose structure for dehumidifying the air and recirculate the same to a second tub as claimed. it therefore would have been obvious to modify the structure of Japan'594, to include dehumidifying as taught by either Muller or Pugh, for the purpose of further dehumidifying the air of any free or residual moisture. Re claim 14, Japan'594 discloses the water-supplying duct. Re claims 15, 24 and 25, Japan'594 discloses the plurality of holes (as at 46, 47, see fig. 1). It should also be noted that it is old and well known to increase heat exchange, by increasing the amount of surface of the heat exchange surface. (see MPEP 2144.04 REVERSAL, DUPLICATION OR RE-ARRANGEMENT OF PARTS). The circumferential application of water is merely and obvious extension of the teachings of Japan'594 in that it merely provides additional water function in the same manner of a single application of cooling water.

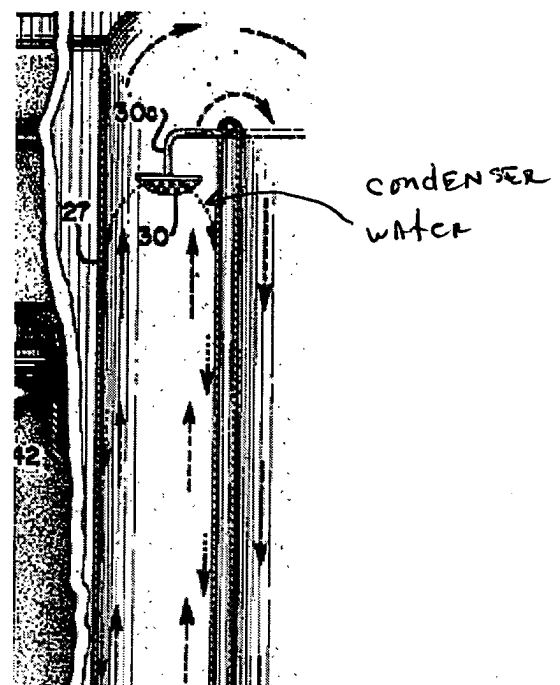
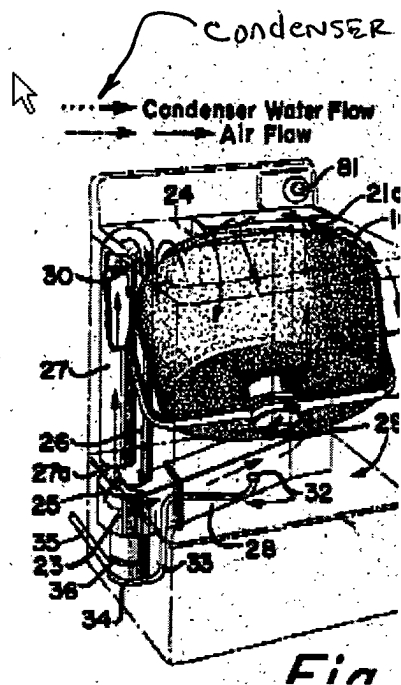
6. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over the applied prior art as applied to claim 13 above, and further in view of Fukumoto et al. re claim 16, Fukumoto is cited as applied to the subject matter of claim 12 as noted above.

7. Claims 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over the cited prior art as applied to claim 1 above, and further in view of Japan'594, Claims 29 and 20 define over the applied prior art only in the recitation of the cover for discharging external water during drying as instantly claimed. Japan'594 is therefore cited as applied to the corresponding subject matter of claims 13, 24 and 25 above.

8. Claims 18, 27 and 28 stand allowed.

9. Applicant's arguments filed October 5, 2006 have been fully considered but they are not persuasive. In regard to the remarks concerning the violation of MPEP § 706.02, in that the examiner's rejection should be confined to the "best art". It is the examiner's position that in the review of literally several thousands of documents, the art applied is confined to the best art. The examiner has not interpreted the above noted section of the MPEP as "single best". In regard to the remarks on the Carr reference, the same are persuasive and has therefore removed Carr as a reference. In regard to the remarks on the Brucken reference in that most of the water is directed directly downward into the rising air, instead of along the sidewall of the tube. Attention is directed to Brucken's figs. 10 and 5, where in fig10., Brucken has shown two arrows, with one representing "condenser water" (see annotation below) having an arrowhead with dots, with the other being and arrowhead with dashes. Note therefore in Brucken's fig. 5, the same representation is shown exiting the shower/nozzle (30) and striking the sidewall of the

tube, with the "condenser water flow" arrowhead with dots also adjacent to and traveling downward the length of the tub. It is the examiner position that given the wide dispersal nozzle/shower (30) in fig. 5, and the condenser flow arrow representation



along the inner sidewall of the tube, Brucken dose in fact disclose the flowing down the tube as claimed. In regard to the remarks on the Sykes reference, namely that Sykes fails to disclose the condensation tube, that the water in Sykes does not flow down the tube and Sykes does a helically groove inner wall. It is noted that the gist of applicant's invention is in fact the specific configuration of the condenser, namely the helical grooves to retard the fluid flow. With that being the case, it is the examiner's position that all condenser art would be analogous, reasonably pertinent and therefore applicable to the problems desired to be solved.

MPEP 2141.02 II. DISTILLING THE INVENTION DOWN TO A "GIST" OR "THRUST" OF AN INVENTION DISREGARDS "AS A WHOLE" REQUIREMENT

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Distilling an invention down to the “gist” or “thrust” of an invention disregards the requirement of analyzing the subject matter “as a whole.” *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984) (restricting consideration of the claims to a 10% per second rate of stretching of unsintered PTFE and disregarding other limitations resulted in treating claims as though they read differently than allowed); *Bausch & Lomb v. Barnes-Hind /Hydrocurve, Inc.*, 796 F.2d 443, 447-49, 230 USPQ 416, 419-20 (Fed. Cir. 1986), cert. denied, 484 U.S. 823 (1987) (District court focused on the “concept of forming ridgeless depressions having smooth rounded edges using a laser beam to vaporize the material,” but “disregarded express limitations that the product be an ophthalmic lens formed of a transparent cross-linked polymer and that the laser marks be surrounded by a smooth surface of unsublimated polymer.”). See also *Jones v. Hardy*, 727 F.2d 1524, 1530, 220 USPQ 1021, 1026 (Fed. Cir. 1984) (“treating the advantage as the invention disregards statutory requirement that the invention be viewed as a whole”); *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1 USPQ2d 1593 (Fed. Cir.), cert. denied, 481 U.S. 1052 (1987) (district court improperly distilled claims down to a one word solution to a problem).

MPEP 2141.02 I. TO RELY ON A REFERENCE UNDER 35 U.S.C. 103, IT MUST BE ANALOGOUS PRIOR ART

The examiner must determine what is “analogous prior art” for the purpose of analyzing the obviousness of the subject matter at issue. “In order to rely on a reference as a basis for rejection of an applicant’s invention, the reference must either be in the field of applicant’s endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned.” *In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992). See also *In re Deminski*, 796 F.2d 436, 230 USPQ 313 (Fed. Cir. 1986); *In re Clay*, 966 F.2d 656, 659, 23 USPQ2d 1058, 1060-61 (Fed. Cir. 1992) (“A reference is reasonably pertinent if, even though it may be in a different field from that of the inventor’s endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor’s attention in considering his problem.”); *Wang Laboratories Inc. v. Toshiba Corp.*, 993 F.2d 858, 26 USPQ2d 1767 (Fed. Cir. 1993); and *State Contracting & Eng’g Corp. v. Condotte America, Inc.*, 346 F.3d 1057, 1069, 68 USPQ2d 1481, 1490 (Fed. Cir. 2003) (where the general scope of a reference is outside the pertinent field of endeavor, the reference may be considered analogous art if subject matter

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disclosed therein is relevant to the particular problem with which the inventor is involved).

MPEP 2141.01 V. ANALOGY IN THE MECHANICAL ARTS

See, for example, *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992) (Applicant claimed an improvement in a hose clamp which differed from the prior art in the presence of a preassembly "hook" which maintained the preassembly condition of the clamp and disengaged automatically when the clamp was tightened. The Board relied upon a reference which disclosed a hook and eye fastener for use in garments, reasoning that all hooking problems are analogous. The court held the reference was not within the field of applicant's endeavor, and was not reasonably pertinent to the particular problem with which the inventor was concerned because it had not been shown that a person of ordinary skill, seeking to solve a problem of fastening a hose clamp, would reasonably be expected or motivated to look to fasteners for garments. The Commissioner further argued in the brief on appeal that a disengageable catch is a common everyday mechanical concept, however the court held that the Commissioner did not explain why a "catch" of unstated structure is such a concept, and why it would have made the claimed invention obvious.). Compare *Stevenson v. International Trade Comm.*, 612 F.2d 546, 550, 204 USPQ 276, 280 (CCPA 1979) ("In a simple mechanical invention a broad spectrum of prior art must be explored and it is reasonable to permit inquiry into other areas where one of ordinary skill in the art would be aware that similar problems exist."). >See also *In re Bigio*, 381 F.3d 1320, 1325-26, 72 USPQ2d 1209, 1211-12 (Fed. Cir. 2004). The patent application claimed a "hair brush" having a specific bristle configuration. The Board affirmed the examiner's rejection of the claims as being obvious in view of prior art patents disclosing toothbrushes. 381 F.3d at 1323, 72 USPQ2d at 1210. The applicant disputed that the patent references constituted analogous art. On appeal, the court upheld the Board's interpretation of the claim term "hair brush" to encompass any brush that may be used for any bodily hair, including facial hair. 381 F.3d at 1323-24, 72 USPQ2d at 1211. With this claim interpretation, the court applied the "field of endeavor test" for analogous art and determined that the references were within the field of applicant's endeavor and hence was analogous art because toothbrushes are structurally similar to small brushes for hair, and a toothbrush could be used to brush facial hair. 381 F.3d at 1326, 72 USPQ2d at 1212.< Also see *In re Deminski*, 796 F.2d 436, 230 USPQ 313 (Fed. Cir. 1986) (Applicant's claims

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related to double-acting high pressure gas transmission line compressors in which the valves could be removed easily for replacement. The Board relied upon references which taught either a double-acting piston pump or a double-acting piston compressor. The court agreed that since the cited pumps and compressors have essentially the same function and structure, the field of endeavor includes both types of double-action piston devices for moving fluids.); *Pentec, Inc. v. Graphic Controls Corp.*, 776 F.2d 309, 227 USPQ 766 (Fed. Cir. 1985) (Claims at issue were directed to an instrument marker pen body, the improvement comprising a pen arm holding means having an integrally molded hinged member for folding over against the pen body. Although the patent owners argued the hinge and fastener art was nonanalogous, the court held that the problem confronting the inventor was the need for a simple holding means to enable frequent, secure attachment and easy removal of a marker pen to and from a pen arm, and one skilled in the pen art trying to solve that problem would have looked to the fastener and hinge art.); and *Ex parte Goodyear Tire & Rubber Co.*, 230 USPQ 357 (Bd. Pat. App. & Inter. 1985) (A reference in the clutch art was held reasonably pertinent to the friction problem faced by applicant, whose claims were directed to a braking material, because brakes and clutches utilize interfacing materials to accomplish their respective purposes.).

It is noted that Sykes specifically discloses "condensation", col. 7, lines 44-53, specifically line 48. As for the water not flowing down the tube, see col. 3, lines 3-19, particularly, lines 13-14, and col. 7, line 73, thru col. 4, line 2. it is understood the stream of air is in contact with the sidewall as well. Also note Sykes, col. 4, lines 39-47. As for the helical groove on the wall, it is understood the a groove is merely the valley between the lands, clearly the space (valley) between the baffle (land) of Sykes can be considered a groove. In regard to the remarks on the Constantine reference, it is agreed that the same fails to disclose a spiral groove. This teaching can be found in Sykes as proposed. This is also applicable to the remarks on the Krupsky and Brucken'126, WIPO'169 and Fukumoto references. In regard to the remarks on Japan'594 and Muller as applied to the subject matter of at least claims 13 and 31, as noted in the paragraph

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5 above, Japan'594 discloses the tub cover on the first tub and the circumferential distribution of cooling water on the inner surface of the first tub and any additional circumferential, would be a mere duplication/extension of the teachings of Japan'594. The remarks pertaining to the subject matter of at least claim 18, are deemed moot as noted in paragraph 8 above.

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to FRANKIE L. STINSON whose telephone number is (571) 272-1308. The examiner can normally be reached on M-F from 5:30 am to 2:00 pm and some Saturdays from approximately 5:30 am to 11:30 am.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr, can be reached on (571) 272-1700. The fax phone number for the organization where this application or proceeding is assigned is 571-272-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

fls



FRANKIE L. STINSON
Primary Examiner
GROUP ART UNIT 1746